

WHAT IS CLAIMED IS:

1. A computer-implemented system of developing multi-tier business applications, comprising:

an Integrated Development Environment (IDE), executed by a computer, for  
5 creating and maintaining a multi-tier business application on a multiple tier computer  
network, wherein the IDE includes a Topological Multi-Tier Business Application  
Composer that is used by a developer to graphically design, develop, maintain, build, test,  
debug, and deploy the multi-tier business application, a Meta-model that captures and  
persistently stores information entered via the Composer, and an Interactive Agent that  
10 monitors the Meta-model for an occurrence of one or more specific events, whereupon the  
Interactive Agent triggers a display of a graphical element in the Composer to interact with  
the developer, and the graphical element includes context information comprising a list of  
suggested and recommended actions.

15 2. The system of claim 1, wherein the Interactive Agent includes a Novice  
mode, and the Interactive Agent is triggered in the Novice Mode when an event occurs that  
is selected from a group comprising:

opening a new window;  
adding a new type of graphical element to a window;  
20 repetitiously adding a same type of graphical element to a window;  
transitioning from one window to another window;  
defining more than a predetermined number of tiers;  
defining less than a predetermined number of tiers;  
defining more than a predetermined number of workstations;  
25 defining less than a predetermined number of workstations;  
defining more than a predetermined number of applications;  
defining less than a predetermined number of applications;  
defining more than a predetermined number of data paths;  
defining less than a predetermined number of data paths;

failure to use a specified feature in a window; and  
an apparent non-awareness of a specified feature in a window.

3. The system of claim 1, wherein the Interactive Agent includes an Advanced  
5 mode, and the Interactive Agent is triggered in the Advanced Mode when an event occurs  
that comprises a possible non-optimization in a portion of the multi-tier business application  
based upon an heuristic analysis of the information gathered by the Composer and stored  
within the Meta-model.

10 4. The system of claim 1, wherein the possible non-optimization is determined  
by examining attributes of the multi-tier business application stored within the Meta-model.

15 5. The system of claim 1, wherein the Meta-model is updated and kept in  
synchronization with any updates made to the multi-tier business application via the  
Composer window.

6. A computer-implemented method for developing multi-tier business  
applications, comprising:  
creating and maintaining a multi-tier business application on a multiple tier computer  
20 network using an Integrated Development Environment (IDE) executed by a computer,  
wherein the IDE includes a Topological Multi-Tier Business Application Composer that is  
used by a developer to graphically design, develop, maintain, build, test, debug, and deploy  
the multi-tier business application, a Meta-model that captures and persistently stores  
information entered via the Composer, and an Interactive Agent that monitors the Meta-  
25 model for an occurrence of one or more specific events, whereupon the Interactive Agent  
triggers a display of a graphical element in the Composer to interact with the developer, and  
the graphical element includes context information comprising a list of suggested and  
recommended actions.

7. The method of claim 6, wherein the Interactive Agent includes a Novice mode, and the Interactive Agent is triggered in the Novice Mode when an event occurs that is selected from a group comprising:

- opening a new window;
- 5 adding a new type of graphical element to a window;
- repetitiously adding a same type of graphical element to a window;
- transitioning from one window to another window;
- defining more than a predetermined number of tiers;
- defining less than a predetermined number of tiers;
- 10 defining more than a predetermined number of workstations;
- defining less than a predetermined number of workstations;
- defining more than a predetermined number of applications;
- defining less than a predetermined number of applications;
- defining more than a predetermined number of data paths;
- 15 defining less than a predetermined number of data paths;
- failure to use a specified feature in a window; and
- an apparent non-awareness of a specified feature in a window.

8. The method of claim 6, wherein the Interactive Agent includes an Advanced mode, and the Interactive Agent is triggered in the Advanced Mode when an event occurs that comprises a possible non-optimization in a portion of the multi-tier business application based upon an heuristic analysis of the information gathered by the Composer and stored within the Meta-model.

9. The method of claim 6, wherein the possible non-optimization is determined by examining attributes of the multi-tier business application stored within the Meta-model.

10. The method of claim 6, wherein the Meta-model is updated and kept in synchronization with any updates made to the multi-tier business application via the

Composer window.

11. An article of manufacture embodying logic for developing multi-tier business applications, the logic comprising:

5       creating and maintaining a multi-tier business application on a multiple tier computer network using an Integrated Development Environment (IDE) executed by a computer, wherein the IDE includes a Topological Multi-Tier Business Application Composer that is used by a developer to graphically design, develop, maintain, build, test, debug, and deploy the multi-tier business application, a Meta-model that captures and persistently stores  
10       information entered via the Composer, and an Interactive Agent that monitors the Meta-model for an occurrence of one or more specific events, whereupon the Interactive Agent triggers a display of a graphical element in the Composer to interact with the developer, and the graphical element includes context information comprising a list of suggested and recommended actions.

15       12. The article of manufacture of claim 11, wherein the Interactive Agent includes a Novice mode, and the Interactive Agent is triggered in the Novice Mode when an event occurs that is selected from a group comprising:

opening a new window;  
20       adding a new type of graphical element to a window;  
repetitiously adding a same type of graphical element to a window;  
transitioning from one window to another window;  
defining more than a predetermined number of tiers;  
defining less than a predetermined number of tiers;  
25       defining more than a predetermined number of workstations;  
defining less than a predetermined number of workstations;  
defining more than a predetermined number of applications;  
defining less than a predetermined number of applications;  
defining more than a predetermined number of data paths;

defining less than a predetermined number of data paths;  
failure to use a specified feature in a window; and  
an apparent non-awareness of a specified feature in a window.

5           13.     The article of manufacture of claim 11, wherein the Interactive Agent  
includes an Advanced mode, and the Interactive Agent is triggered in the Advanced Mode  
when an event occurs that comprises a possible non-optimization in a portion of the multi-  
tier business application based upon an heuristic analysis of the information gathered by the  
Composer and stored within the Meta-model.

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          14.     The article of manufacture of claim 11, wherein the possible non-  
optimization is determined by examining attributes of the multi-tier business application  
stored within the Meta-model.

15           15.     The article of manufacture of claim 11, wherein the Meta-model is updated  
and kept in synchronization with any updates made to the multi-tier business application via  
the Composer window.

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